



[6450-01-P]

DEPARTMENT OF ENERGY

Draft Environmental Assessment for the Commercial Disposal of Defense Waste Processing Facility Recycle Wastewater from the Savannah River Site

AGENCY: Office of Environmental Management, U.S. Department of Energy.

ACTION: Notice of availability.

SUMMARY: The U.S. Department of Energy (DOE) announces the availability of its *Draft Environmental Assessment for the Commercial Disposal of Defense Waste Processing Facility Recycle Wastewater from the Savannah River Site* (DOE/EA-2115) (Draft SRS DWPF Recycle Wastewater EA). The Draft SRS DWPF Recycle Wastewater EA evaluates the potential impacts from a proposed action to retrieve, stabilize, and dispose of up to 10,000 gallons of Defense Waste Processing Facility (DWPF) recycle wastewater from Savannah River Site (SRS) at a commercial low-level radioactive waste (LLW) disposal facility located outside of South Carolina, licensed by either the Nuclear Regulatory Commission (NRC) or an Agreement State under NRC's regulations regarding licensing requirements for land disposal of radioactive waste. If implemented, this proposal would provide alternative treatment and disposal options for up to 10,000 gallons of DWPF recycle wastewater through the use of existing, permitted, off-site commercial facilities. DOE invites public comments on the Draft SRS DWPF Recycle Wastewater EA.

DATES: The 30-day public comment period extends from the date of publication of this notice in the *Federal Register* through **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. Only comments received through

one of the methods below will be accepted. DOE will consider all comments received or postmarked by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. DOE will hold an informational meeting to discuss the Draft SRS DWPF Recycle Wastewater EA on Tuesday, December 17, 2019 (5:00-6:30 pm ET) at the Augusta Marriott at the Convention Center, 2 Tenth Street, Augusta, Georgia, 30901. The meeting will consist of a poster session from 5:00 pm to 6:00 pm ET, followed by a presentation from 6:00 to 6:30 pm ET. DOE will also hold an informational WebEx on December 19, 2019 at 2 pm ET to provide an overview of the Draft SRS DWPF Recycle Wastewater EA. This WebEx can be accessed at: <https://doe.webex.com/doe/j.php?MTID=mde89cd8501ec09cb5732714dd60174fe>. The Draft SRS DWPF Recycle Wastewater EA is available at:

<https://www.energy.gov/nepa/doe-environmental-assessments>.

ADDRESSES: To request a printed copy of the Draft SRS DWPF Recycle Wastewater EA, or to be placed on the SRS DWPF Recycle Wastewater EA mailing list, please submit your request to James Joyce, NEPA Document Manager, U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585. Telephone: (301) 903-2151. Email: DWPFEA@em.doe.gov. DOE invites Federal agencies, state and local governments, Native American tribes, industry, non-governmental organizations, and members of the general public to submit comments on DOE's Draft SRS DWPF Recycle Wastewater EA. Please direct written comments on the Draft DWPF SRS Recycle Wastewater EA to:

- (a) Email: DWPFEA@em.doe.gov. Please submit comments in MicrosoftTM Word or PDF file format and avoid the use of encryption.

(b) Mail: James Joyce, U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585.

Because your comments will be made public, you are solely responsible for ensuring that your comments do not include any confidential information that you or a third party may not wish to be posted.

FOR FURTHER INFORMATION CONTACT: For information related to this EA, please contact James Joyce, U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM-4.2), 1000 Independence Avenue, S.W., Washington, DC 20585. Email: *DWPFEA@em.doe.gov*. Telephone: (301) 903-2151. For information related to DOE's high-level radioactive waste (HLW) interpretation, please contact Theresa Kliczewski, U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM-4.2), 1000 Independence Avenue, S.W., Washington, DC 20585. Email: *Theresa.Kliczewski@em.doe.gov*.

SUPPLEMENTARY INFORMATION:

Background

The Savannah River Site (SRS) occupies approximately 300 square miles primarily in Aiken and Barnwell counties in South Carolina. Over the years, a primary SRS mission has been the production of special radioactive isotopes to support national defense programs. More recently, the SRS mission has also emphasized waste management, environmental restoration, and the decontamination and decommissioning of facilities that are no longer needed for SRS's traditional defense activities. SRS generated large quantities of liquid radioactive waste as a result of its nuclear materials

production mission. This liquid radioactive waste has historically been managed as high-level radioactive waste (HLW). The waste was placed into underground storage tanks at SRS and consists primarily of three physical forms: sludge, saltcake, and liquid supernatant. The sludge portion in the underground tanks is being transferred on-site to the Defense Waste Processing Facility (DWPF) for vitrification in borosilicate glass to immobilize the radioactive constituents, as described in the *Final Supplemental Environmental Impact Statement—Defense Waste Processing Facility* (DOE/EIS-0082-S; DWPF SEIS) and subsequent Record of Decision (ROD) (April 12, 1995, 60 FR 18589). The resulting vitrified waste form is poured as molten glass into production canisters where it cools into a solid glass-waste and is securely stored at SRS until DOE establishes a final disposition path.

DWPF operations generate recycle wastewater. The DWPF recycle wastewater is a combination of several dilute liquid waste streams consisting primarily of condensates from the vitrification processes. Other components of the DWPF recycle wastewater include process samples, sample line flushes, sump flushes, and cleaning solutions from the decontamination and filter dissolution processes. Currently, the DWPF recycle wastewater is returned to the tank farm for volume reduction by evaporation or is beneficially reused in salt dissolution or sludge washing.

To analyze capabilities of a potential alternative treatment and disposal method at the end of the liquid waste mission life, DOE is proposing to dispose of up to 10,000 gallons of stabilized DWPF recycle wastewater from the SRS H-Area Tank Farm at a commercial low-level radioactive waste (LLW) facility outside of South Carolina,

licensed by either the U.S. Nuclear Regulatory Commission (NRC) or an Agreement State¹ under 10 CFR part 61.

On October 10, 2018, DOE published a notice in the *Federal Register* requesting public comment on its interpretation of the definition of the statutory term, “high-level radioactive waste,” as set forth in the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*) and the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 *et seq.*) (83 FR 50909). In that notice, DOE explained the history and basis for its interpretation to classify the waste based on its radiological contents and not on the origin of the waste. Subsequently, on June 10, 2019, DOE published a supplemental notice in the *Federal Register* that provided additional explanation of DOE’s interpretation as informed by public review and comment and further consideration by DOE (84 FR 26835). DOE revised its interpretation after consideration of public comments, which included comments from the NRC, affected states and Native American tribes, and stakeholders, in order to clarify its meaning and import. This interpretation intends to facilitate the safe disposal of defense reprocessing waste if the waste meets either of the following two criteria:

1. Does not exceed concentration limits for Class C LLW as set out in 10 CFR 61.55 and meets the performance objectives of a disposal facility, or

¹ Congress authorized the NRC to enter into Agreements with states that allow the states to assume, and the NRC to discontinue, regulatory authority over source, byproduct, and small quantities of special nuclear material. The states, known as Agreement States, can then regulate byproduct, source, and small quantities of special nuclear materials that are covered in the Agreement, using its own legislation, regulations, or other legally binding provisions. (Section 274b of the Atomic Energy Act of 1954, as amended).

2. Does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable requirements.

NRC's performance objectives for commercial LLW disposal facilities are specified in 10 CFR part 61, Subpart C, "Performance Objectives." Performance objectives are the quantitative radiological standards set by the NRC or DOE to ensure protection of the health and safety of individuals and the environment during operation, and after permanent closure of the disposal facility. Performance assessments quantitatively evaluate a disposal facility's ability to protect human health and the environment by evaluating potential radiological human exposure after disposal facility closure. Performance assessments measure and evaluate risk by analyzing the long-term evolution of the waste forms and engineered features and the effect such changes could have on the performance of a waste disposal system and the surrounding environment.

As stated in the supplemental notice, DOE will continue its current practice of managing all its defense reprocessing wastes as if they were HLW unless and until a specific waste is determined to be another category of waste based on detailed assessments of its characteristics and an evaluation of potential disposal pathways.²

On June 10, 2019, DOE published a notice in the *Federal Register* (84 FR 26847) announcing its intent to prepare an EA to analyze the potential impacts of disposing of up to 10,000 gallons of stabilized DWPF recycle wastewater from the SRS H-Tank Farm at a commercial LLW disposal facility located outside of South Carolina licensed by either

² DOE's HLW interpretation would not affect practices for the management of other reprocessing waste at SRS, which include stabilization and disposal of treated liquid radioactive waste at the Saltstone Disposal Facility and F and H farm tank closures as non-HLW under Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108-375).

the NRC or an Agreement State under 10 CFR part 61. The Draft SRS DWPF Recycle Wastewater EA was prepared in accordance with the Council on Environmental Quality regulations and DOE National Environmental Policy Act (NEPA) implementing procedures at 40 CFR parts 1500-1508 and 10 CFR part 1021, respectively.

Purpose and Need for Action

DOE's purpose and need for action is to analyze capabilities for alternative treatment and disposal options for DWPF recycle wastewater through the use of existing, permitted, off-site commercial facilities. When DOE prepared the 1994 DWPF SEIS and the *Savannah River Site Salt Processing Alternatives Final Supplemental Environmental Impact Statement* (DOE/EIS-082-S2), DOE did not analyze the potential environmental impacts associated with potential commercial treatment and disposal options for DWPF recycle wastewater. DOE now proposes to use commercial LLW disposal facilities for up to 10,000 gallons of DWPF recycle wastewater to inform planning activities on treatment and disposal options for completion of the tank closure program. Any proposal to dispose of more than 10,000 gallons of DWPF recycle wastewater would be evaluated in a separate NEPA review. Treatment and/or disposal of this waste at a commercial LLW facility would inform planning activities for the three years between the completion of the Salt Waste Processing Facility (SWPF) mission (estimated 2031) and DWPF mission completion (estimated 2034). During this period, DOE will not have the option of returning DWPF recycle wastewater to SWPF for processing because SWPF will have completed its mission of treating salt waste from the tank farms and will undergo closure.

Proposed Action and Alternatives

DOE's proposed action is to dispose of up to 10,000 gallons of stabilized (e.g., grouted³) DWPF recycle wastewater from the SRS H-Area Tank Farm at a commercial LLW facility outside of South Carolina, licensed by either the NRC or an Agreement State under 10 CFR part 61. Prior to a disposal decision, DOE would characterize the DWPF recycle wastewater to determine whether it meets DOE's HLW interpretation for disposal as non-HLW. As part of this process, DOE would determine and verify with the licensee of the commercial LLW disposal facility that the stabilized waste meets the facility's waste acceptance criteria and all other requirements of the disposal facility, including any applicable regulatory requirements (e.g., the *Resource Conservation and Recovery Act* [42 U.S.C. 6901]) for treatment of the waste prior to disposal and applicable U.S. Department of Transportation (USDOT) requirements for packaging and transportation from SRS to the commercial facility.

DOE has identified three action alternatives for the proposed action:

- Alternative 1 would deploy a treatment capability at SRS to stabilize up to 10,000 gallons of DWPF recycle wastewater and then transport the grouted waste form to a licensed commercial disposal facility, either the Waste Control Specialists

³ Grout is a proven safe and effective technology that continues to be used by DOE and other national and international parties to stabilize radioactive wastes, including certain tank wastes, for disposal. Use of stabilization agents for this purpose is consistent with the *NRC's Concentration Averaging and Encapsulation Branch Technical Position, Revision 1, Volume 1*, February 2015 (<https://www.nrc.gov/docs/ML1225/ML12254B065.pdf>), which allows mixing of nonradioactive constituents with radioactive waste (e.g., solidification, encapsulation, or additives used in thermal processing) provided the mixing has a purpose other than reducing the waste classification, such as waste stabilization or process control. Furthermore, the addition of stabilization agents to the waste prior to disposal is often necessary to meet the NRC requirements in 10 CFR 61.56, "Waste Characteristics" (e.g., to ensure stability of the waste form).

(WCS) site near Andrews, Texas (if determined to be Class A, B or C LLW)⁴ and/or the *EnergySolutions* site near Clive, Utah (if determined to be Class A LLW),⁵ depending upon waste content and facility waste acceptance criteria.

- Alternative 2 would transport up to 10,000 gallons of DWPF recycle wastewater to a licensed commercial disposal facility, either the WCS site and/or the *EnergySolutions* site, with the capability to stabilize and dispose of the final waste form.
- Alternative 3 would transport up to 10,000 gallons of DWPF recycle wastewater to a permitted and licensed commercial treatment facility with the capability to stabilize the liquid into a stabilized waste form, and then transport the final waste form to a licensed commercial disposal facility, either the WCS site and/or the *EnergySolutions* site, depending upon waste content and facility waste acceptance criteria.

The Draft SRS DWPF Recycle Wastewater EA also analyzed a no action alternative under which the up to 10,000 gallons of DWPF recycle wastewater would remain in the SRS liquid waste system.

NEPA Process

⁴ WCS is licensed by the Texas Commission on Environmental Quality for the disposal of Class A, B, and C LLW that meets specified waste acceptance criteria. Disposal of the stabilized waste at the WCS site would be conducted in accordance with the facility's operating license (Radioactive Material License No. CN600616890/RN101702439).

⁵ *EnergySolutions* is licensed by the Utah Department of Environmental Quality for the disposal of Class A LLW that meets specified waste acceptance criteria. Disposal of the stabilized waste at the *EnergySolutions* site would be conducted in accordance with the facility's operating license (Radioactive Material License No. UT 2300249).

All comments on the Draft SRS DWPF Recycle Wastewater EA received during the public comment period will be considered in preparation of the Final SRS DWPF Recycle Wastewater EA. Following the public comment period, and based on the Final SRS DWPF Recycle Wastewater EA and consideration of all comments received, DOE will either issue a Finding of No Significant Impact (FONSI) or announce its intent to prepare an environmental impact statement (EIS). If DOE determines that a FONSI is appropriate, both the Final EA and FONSI will be made available to the public. If DOE determines that an EIS is needed, either during preparation of the Final SRS DWPF Recycle Wastewater EA or after completing the EA, DOE would issue in the *Federal Register* a Notice of Intent to prepare an EIS. Consultations with other agencies (e.g., State Historic Preservation Officer, U.S. Fish and Wildlife Service) were not required or undertaken in connection with the Draft SRS DWPF Recycle Wastewater EA. As required under DOE's NEPA implementing procedures (10 CFR 1021.301(c)), the following agencies were individually notified of the preparation of this EA: U.S. Environmental Protection Agency; South Carolina Department of Health and Environmental Control; Texas Commission on Environmental Quality; and Utah Department of Environmental Quality.

Signed at Washington, DC on December 4, 2019.

Elizabeth A. Connell,

Associate Principal Deputy Assistant Secretary for Regulatory and Policy Affairs,

Office of Environmental Management,

U.S. Department of Energy.

